AMENDMENTS TO THE SPECIFICATIONS

Please replace paragraph [0009] with the following amended paragraph:

[0009] The invention, therefore, according to one aspect provides an operations, management, capacity, and services (OMCS) tool for assessing business solutions comprising alternative network architectures and management processes for a telecommunications network. The OMCS tool comprises means for inputting data and options for plurality of network architectures; and network, service, and customer management processes by an analyst. The tool comprises means for engineering the plurality of network architectures and the network, service, and customer management processes based on the input data and options. The tool comprises means for determining suppliers' equipment and management processes costs for the plurality of network architectures and the network management processes and the service and customer management processes. The tool also comprises means for determining business parameters for the business solutions; and means for storing or displaying the business parameters for the business solutions for the telecommunications network ~~comprises a means for analyzing business parameters for a plurality of network architectures; and comparing the business parameters for said network architectures for determining cost savings of one network architecture versus another and for determining a business solution that articulates the network architecture for reducing total expenditure~~.

Please replace paragraph [0010] with the following amended paragraph:

[0010] The means for determining the business parameters comprise means for computing [[the]] total expenditure; and wherein the total expenditure comprises capital expenditure (CAPEX) and operational expenditure (OPEX). The CAPEX comprises a network architecture cost; taxes; interests; and ~~deprecation~~ depreciation and amortization (D/A) expenses. The OPEX comprises a management processes

cost; a leasing cost; and sales, general and administration (SG&A) expenses.

Please replace paragraph [0011] with the following amended paragraph:

[0011] The business parameters further comprise financial statistics which comprise revenue; capacity; return on investment (ROI); earnings before interest, taxes, and ~~deprecation~~ depreciation and amortization (EBITDA); earnings before interest and taxes (EBIT); OPEX as percentage of revenue; and total expenditure as percentage of revenue. The means for determining the business parameters comprise means for computing the business parameters for the business solutions over a pre-determined study period; and means for storing or displaying the business parameters in tables and graphical charts for the business solutions over the pre-determined study period.

Please replace paragraph [0012] with the following amended paragraph:

[0012] The OMCS tool comprises means for inputting traffic data; customer data; and financial and labor data; and means for inputting technology options which comprise ~~analyzing the business parameters comprises means for analyzing the business parameters for a network architecture having~~ one or more of the following technology: TDM, ATM, FR, IP, VPN, MPLS, and optical Ethernet including fiber, synchronous optical network (SONET), resilience packet ring (RPR), and dense wavelength division multiplexing (DWDM), for a network architecture for a business solution; [[.]] and [[This]] means for inputting management processes options for the network management processes and the service and customer management processes for managing the network architecture for the business solution ~~further comprises a means for computing the business parameters for each of said network architectures over a pre-determined study period~~.

Please replace paragraph [0013] with the following amended paragraph:

[0013] The OMCS tool comprises means for validating and calibrating the input data and options and the costs for the plurality of network architectures and the network, service, and customer management processes for the business solutions ~~comparing the business parameters for the plurality of network architectures comprises means for reporting the business parameters for each of said network architectures over said pre-determined study period, wherein the business solution comprises the network architecture with the least total expenditure~~.

Please replace paragraph [0014] with the following amended paragraph:

[0014] The OMCS tool ~~further~~ comprises means for engineering ~~a plurality of~~ the network architecture ~~architectures~~ for the business solution; and means for ~~a pre-determined input user data;~~ determining a network architecture cost and a leasing cost for the network architecture for the business solution ~~each of said network architectures over a pre-determined study period; engineering management processes for managing each of said network architectures; and determining a management processes cost for said management processes over said pre-determined study period. The tool further comprises means for inputting user data; and validating and calibrating the input user data; the network architecture cost; the leasing cost; and the management processes cost for each of said network architectures~~.

Please replace paragraph [0015] with the following amended paragraph:

[0015] The ~~OMCS tool~~ means for engineering the ~~plurality of~~ network architecture ~~architectures~~ comprises [[a]] means for determining an owned network elements (NEs) count; a leased NEs count; an owned customer premise equipment (CPE) count; a leased CPE count; an owned links count; a leased links count; and a leased ports count. ~~for each of said network architectures; and wherein said~~ The

network architecture ~~architectures~~ comprises ~~having~~ NEs, CPE, and links from the same or different equipment suppliers.

Please replace paragraph [0016] with the following amended paragraph:

[0016] The ~~OMCS tool~~ means for determining the network architecture cost ~~and the leasing cost for each of the plurality of network architectures~~ comprises means for determining an owned cost (a price) per network element (NE), a footprint per NE cost, [[and]] a power consumption per NE cost; ~~determining~~ an owned cost (a price) per CPE, a footprint per CPE cost, [[and]] a power consumption per CPE cost; ~~and determining~~ an owned cost (a price) per link and a link transmission rate.

Please replace paragraph [0017] with the following amended paragraph:

[0017] The means for determining the network architecture cost further comprises means for computing a total owned NEs cost; a total owned CPE cost; and a total owned links cost for ~~each of said~~ the network architecture ~~architectures~~ for the business solution ~~over said pre-determined study period. The means for determining the leasing cost comprises a means for computing a total footprints cost and a total power consumptions cost for said NEs and CPE over said pre-determined study period~~.

Please replace paragraph [0018] with the following amended paragraph:

[0018] The ~~OMCS tool~~ means for determining the leasing cost ~~further~~ comprises means for determining a leased per NE cost, a footprint per NE cost, [[and]] a power consumption per NE cost; ~~determining~~ a leased per CPE cost, a footprint per CPE cost, [[and]] a power consumption per CPE cost; ~~determining~~ a leased per link cost ~~and a link transmission rate~~; ~~determining~~ a leased link per unit

length cost, a unit length per link count, and a link transmission rate; and ~~determining~~ a leased per port cost. This means further comprises means for computing a total leased NEs cost; a total leased CPE cost; a total footprints cost and a total power consumptions cost for [[said]] the NEs and CPE; a total leased links cost; a total leased links [[for]] per unit length cost; and a total leased ports cost for ~~each of said~~ the network architecture ~~architectures~~ for the business solution ~~over said pre-determined study period~~.

Please replace paragraph [0019] with the following amended paragraph:

[0019] The OMCS tool comprises means for engineering the management processes ~~comprises means for engineering~~ which comprise network management processes; and service and customer management processes [[,]] having ~~wherein said management~~ processes ~~having said processes~~ from the same or different management processes suppliers for managing the network architecture for the business solution. It also comprises means for determining a management processes cost comprising a network management processes cost and a service and customer management processes cost.

Please replace paragraph [0020] with the following amended paragraph:

[0020] The means for engineering the network management processes comprises a means for ~~selecting~~ engineering one or more of the following processes: inside plant maintenance; outside plant maintenance; network engineering; network provisioning; installation; testing; and repairs.

Please replace paragraph [0021] with the following amended paragraph:

[0021] The means for engineering the service and customer management

processes comprises a means for ~~selecting~~ engineering one or more of the following processes: customer relationship management (CRM); work order management (WOM); network inventory management ([[NAI]] NIM); service activation and provisioning (SAP); fault management (FM); performance management (PM); accounting and billing; and security management.

Please replace paragraph [0022] with the following amended paragraph:

[0022] The ~~OMCS tool~~ means for determining the network management processes cost comprises a means for determining a process cost per NE for each of said network management processes based on whether the operations of each of the network management processes is performed using [[for]] one or more of the following: a manual operations mode; a mechanized operations mode; and a manual and mechanized operations mode. The means for determining the service and customer management processes cost ~~further~~ comprises a means for determining a process cost per link for each of said service and customer management processes based on whether the operations of each of the service and customer management processes is performed using [[for]] one or more of the following: a manual operations mode; a mechanized operations mode; and a manual and mechanized operations mode.

Please delete paragraphs [0023] to [0029]

Please replace paragraph [0030] with the following amended paragraph:

[0030] A further aspect of the invention provides a method for assessing business solutions comprising alternative network architectures and management processes for a telecommunications network. The method comprises the steps of inputting data and options for plurality of network architectures and network, service,

and customer management processes by an analyst. The method comprises the steps of engineering the plurality of network architectures and the network, service, and customer management processes based on the input data and options. The method comprises the steps of determining suppliers' equipment and network, service, and customer management processes costs. The network management processes and the service and customer management processes are for managing the plurality of network architectures. The method also comprises the steps of determining business parameters for the business solutions; and storing or displaying the business parameters for the business solutions for the telecommunications network ~~developing business solution for a telecommunications network using the OMCS tool. The method comprises the steps of receiving data for a plurality of network architectures; analyzing the received data to compute business parameters for said network architectures; and comparing said computed business parameters for said network architectures for determining cost savings of one network architecture versus another and for determining a business solution that articulates the network architecture for reducing total expenditure~~.

Please replace paragraph [0031] with the following amended paragraph:

[0031] The method comprises the steps of determining the business parameters for the business solutions over a pre-determined study period; and storing or displaying in tables and graphical charts the business parameters for the business solutions over the pre-determined study period ~~comprise the total expenditure; and wherein the total expenditure comprises CAPEX and OPEX. The business parameters further comprise business and financial statistics comprising revenue, capacity, ROI, EBITDA, EBIT, OPEX as percentage of revenue, and total expenditure as percentage of revenue~~.

Please replace paragraph [0032] with the following amended paragraph:

[0032] The ~~step of receiving data~~ method comprises [[a]] the step of validating and calibrating the data and options and the costs for the ~~receiving input user data; network architectures data; management processes data;~~ network architectures ~~options~~; network management processes ~~options~~; and service and customer management processes ~~options for the plurality of network architectures~~ for the business solutions.

Please replace paragraph [0033] with the following amended paragraph:

[0033] The ~~step of analyzing the business parameters~~ method comprises [[a]] the steps [[step]] of inputting traffic data, customer data, and labor and financial data; inputting technology options which comprise ~~analyzing the business parameters for a network architecture having~~ one or more of the following technology: TDM, ATM, FR, IP, VPN, MPLS, and optical Ethernet including fiber, SONET, RPR, and DWDM, for a network architecture for a business solution; and inputting management processes options for the network management processes and the service and customer management processes for managing the network architecture for the business solution. ~~This step further comprises a step of adjusting and updating data for said network architectures.~~

Please replace paragraph [0034] with the following amended paragraph:

[0034] The method comprises engineering the network architecture for the business solution; and determining a network architecture cost and a leasing cost for the network architecture for the business solution ~~step of comparing the business parameters for the plurality of network architectures comprises a step of reporting said business parameters for said network architectures over a predetermined study period; and wherein the business solution comprises the network architecture with the least~~

~~total expenditure and said network architecture having NEs, CPE, and links from the same or different equipment suppliers; and having network, service, and customer management processes from the same or different management processes suppliers~~.

Please replace paragraph [0035] with the following amended paragraph:

[0035] The method ~~step of reporting the business parameters further~~ comprises engineering network management processes which comprise one or more of the following processes: inside plant maintenance, outside plant maintenance, network engineering, network provisioning, installation, testing, and repairs; and engineering service and customer management processes which comprise one or more of the following processes: CRM, WOM, NIM, SAP, FM, PM, accounting and billing, and security management for managing the network architecture for the business solution. The method also comprises the steps of determining a management processes cost which comprises a network management processes cost and a service and customer management processes cost for the business solution based on whether the operations of each of these management processes is performed manually, using mechanized systems (i.e., operations support systems (OSS)) or both based on the Service Provider operating environment~~a step of tabulating and graphically charting the business parameters for each of said network architectures over said pre-determined study period~~.

Please add the following new paragraph after paragraph [0035]:

[0035.1] Another aspect of the invention provides a computer-readable medium containing program instructions for causing a computer to perform the above method for assessing the business solutions for the telecommunications network. In one embodiment of this invention, the program is a self-contained Microsoft EXCEL-based decision support software tool comprises a plurality of EXCEL workbooks. In another embodiment of this invention, the program is a self-contained software tool

comprises a plurality of sub-programs linked together and the sub-programs are written in one or more of the following computer languages: machine language, C/C++, virtual basic, and Java.

Please replace paragraph [0036] with the following amended paragraph:

[0036] This invention provides an operations, management, capacity, and services (OMCS) tool and method for ~~developing~~ assessing business solutions ~~solution~~ for a telecommunications network. The business solutions comprise plurality of network architectures having various technologies and network, service, and customer management processes for managing the plurality of network architectures. The management processes replicate today's operations and management networks for Service Providers. The network management processes cost and the service and customer management processes cost are determined based on whether the operations of each of the network, service, and customer management processes is performed manually, using mechanized systems (i.e., operations support systems (OSS)) or both based on the Service Provider operating environment. The OMCS tool automates the calculation of the business parameters for the business solutions ~~a plurality of network architectures~~ and enables the Service Provider to compare ~~comparison of~~ technology alternatives for [[said]] the network architectures for the business solutions. The OMCS tool provides a comprehensive view of the business solutions ~~solution~~ for the telecommunications network that enables the Service Provider to quantify ~~articulates~~ the savings of one ~~network architecture~~ business solution versus another and identifies the areas for cost reduction.

Please replace paragraph [0037] with the following amended paragraph:

[0037] Advantageously, the costs for managing and operating the network architecture are integrated with the cost of the network architecture in the total cost of the business solution and the Service Provider would be able to identify the areas for

enhancing or reducing the management and operating cost of the telecommunications network. Reducing the management and operating cost of a telecommunications network is critical to the survival of the Service Provider. The embodiments of the present invention provide improved software tools and methods for assessing business solutions ~~solution~~ for a telecommunications network that would overcome the shortcomings and limitations of the prior arts.

Please replace paragraph [0060] with the following amended paragraph:

[0060] Figure 1 shows a diagram illustrating an operations, management, capacity, and services (OMCS) tool 100 which comprises ~~comprising software modules for~~ input user data 110 means; engineering a plurality of network architectures 120 means; determining suppliers equipment costs 140 means; engineering management processes 130 means; determining suppliers management processes costs 150 means; validating and calibrating data 155 means; analyzing business parameters 160 means; and reporting business solutions 170 means.

Please replace paragraph [0061] with the following amended paragraph:

[0061] The input user data 110 means ~~module~~ enables an analyst to input user data and options for a plurality of network architectures to be modeled. The input user data comprises traffic data; customer data; and financial and ~~labour~~ labor data. The options enable the analyst to select technology alternatives for network architectures and management processes for managing said network architectures for business solutions for a telecommunications network.

Please replace paragraph [0062] with the following amended paragraph:

[0062] The options for the technology alternatives for network architectures

comprise one or more of the following: time division multiplexing (TDM), asynchronous transfer mode (ATM), frame relay (FR), Internet protocol (IP), virtual private network (VPN), multi protocol label switching (MPLS), and optical Ethernet including fiber, synchronous optical network (SONET), resilience packet ring (RPR), and dense wavelength division multiplexing (DWDM). The options for the management processes enable the analyst to select the network management processes, and service and customer management processes for managing said technology alternatives for the network architectures for the business solutions.

Please replace paragraph [0063] with the following amended paragraph:

[0063] The network architectures to be modeled are configured in the engineering a plurality of network architectures 120 means ~~module~~ and network architectures data for said network architectures are determined. A network architecture cost and a leasing cost for each of said network architectures are determined by communicating with the determining suppliers equipment costs 140 means ~~module~~. This means ~~module~~ communicates with suppliers' equipment database (not shown) for costing (owned and leased) network elements (NEs), customer premise equipment (CPE), and links for each of the network architectures.

Please replace paragraph [0064] with the following amended paragraph:

[0064] The engineering management processes 130 means ~~module defines~~ engineers management processes for managing each of said network architectures and the determining supplier management processes costs 150 means ~~module~~ determines their costs. The determining supplier management processes costs 150 means ~~module~~ communicates with a suppliers' management processes database (not shown) for costing each management process for network, service, and customer management.

Please replace paragraph [0065] with the following amended paragraph:

[0065] The validating and calibrating data 155 means ~~module~~ validates and calibrates the data received from the input user data 110 means ~~module~~; the engineering a plurality of network architectures 120 means ~~module~~; the engineering management processes 130 means ~~module~~; the determining suppliers equipment costs 140 means ~~module~~; and the determining suppliers management processes costs 150 means ~~module~~, to ensure that service, customer, and network requirements and management are met in terms of quality of service (QoS) and network capacity.

Please replace paragraph [0066] with the following amended paragraph:

[0066] The analyzing business parameters 160 means ~~module~~ combines the data received from the validating and calibrating data 155 means ~~module~~ to compute business parameters for ~~each of said network architectures~~ the business solutions over a pre-determined study period, wherein the pre-determined study period comprises a plurality of a pre-determined time periods, (for example, for a pre-determined time period of one year, the pre-determined study period could be five or ten years).

Please replace paragraph [0067] with the following amended paragraph:

[0067] The business parameters comprise total expenditure, wherein the total expenditure comprises capital expenditure (CAPEX) and operational expenditure (OPEX). The CAPEX comprises a network architecture cost, taxes, interests, and ~~deprecation~~ depreciation and amortization (D/A) expenses; and the OPEX comprises a management processes cost; a leasing cost; and sales, general and administration (SG&A) expenses.

Please replace paragraph [0068] with the following amended paragraph:

[0068] The business parameters further comprise financial and business statistics comprising revenue; capacity; return on investment (ROI); earnings before interest, taxes, and ~~deprecation~~ depreciation and amortization (~~EBrIDA~~ EBITDA); earnings before interest and taxes (EBIT); OPEX as percentage of revenue; and total expenditure as percentage of revenue.

Please replace paragraph [0069] with the following amended paragraph:

[0069] The reporting business solutions 170 means ~~module~~ reports in tables and graphical charts the business parameters for ~~each of said network architectures~~ the business solutions over said pre-determined study period.

Please replace paragraph [0087] with the following amended paragraph:

[0087] The ARCH1 520 having switching nodes 521 and services nodes 522 from supplier A 501; add/drop nodes [[524]] 523 and cross-connect nodes 524 from supplier B 502; and other nodes 525 from supplier C 503. The ARCH2 530 having switching nodes 531 and services nodes 532 from supplier A 504; add/drop nodes [[534]] 533 and cross-connect nodes 534 from supplier B 505; and other nodes 535 from supplier C 506. The ARCH3 540 having switching nodes 541 and services nodes 542 from supplier A 507; add/drop nodes [[544]] 543 and cross-connect nodes 544 from supplier B 508; and other nodes 545 from supplier C 509.

Please replace paragraph [0094] with the following amended paragraph:

[0094] A total footprints cost 675 is determined by multiplying the sum of the owned CPE count 650 and the leased CPE count 663 by the footprint per CPE cost

670. A total owned CPE cost 660 is determined by multiplying the owned CPE count 650 by the price per CPE 655. A total leased CPE cost 680 is determined by multiplying the leased CPE count 663 by the leased per CPE cost 665. A total power consumptions cost 690 is determined by multiplying the sum of the owned CPE count 650 and the leased CPE count 663 by the power consumption per CPE cost 685.

Please replace paragraph [0097] with the following amended paragraph:

[0097] The ARCH1 720 having T1 721 and T3 722 links from supplier A 701; E1 723 and E3 724 links from supplier B 702; and DSL links 725, 10/100 BT 726, and 100/1000 BT 727 links from supplier C 703. The ARCH2 730 having fiber 100FX 731 from supplier A 704; OC3 732, OC12 733, OC48 734, and OC 192 links 735 from supplier B 705; and DWDM ring 736, RPR ring 737, and 1000SX/1000LX 738 from supplier C 706. The ARCH3 740 having SONET ring 741 and microwave 742 links from supplier A 707; fiber 100 FX 743 and 100/1000 BT 744 links from supplier B 708; and DSL 745 and T3 746 links from supplier C 709.

Please replace paragraph [0151] with the following amended paragraph:

[0151] Procedure 1700 adjusts and updates data (block 1780) as required and re-analyzes the business parameters (block 1740). When analysis is completed for the pre-determined study period, procedure 1700 reports the business parameters for said network architectures over the pre-determined study period. The reporting of said business parameters comprises tabulating and graphically charting the business parameters (block 1790) for each of the network architectures over said pre-determined study period, thus, finishing the procedure 1700 (block 1795).

Please replace paragraph [0168] with the following amended paragraph:

[0168] Figure 21 shows an illustrative graphical output from an execution of the OMCS tool of Figure 1. The graph 2100 plots dollars per Mbps [[2010]] 2110 over five years study period 2120, year0, year1, year2, year3, and year4 for five network architectures ARCH1 2130, ARCH2 2135, ARCH3 2140, ARCH4 2145, and ARCH5 2150. The five architectures represent the five different technologies described in Figure 18 above. In graph 2100 it can be seen that the return on investment for ARCH5 2050 is higher than the other architectures.

Please replace paragraph [0169] with the following amended paragraph:

[0169] The embodiments of this invention provide a software tool that automates the calculation of [[the]] business parameters for ~~a plurality of network architectures~~ business solutions for a telecommunications network. A user of the OMCS tool is able to select, engineer, and cost plurality of network architectures having various technologies and different network, service, and customer management processes for a telecommunications network. The network, service, and customer management processes replicate today's operations and management networks for Service Providers. The ~~OMCS tool enables comparison of different~~ network architectures ~~comprising~~ comprise NEs, CPE, and links from the same or different equipment suppliers, and have network, service, and customer management processes from the same or different management processes suppliers.

Please replace paragraph [0172] with the following amended paragraph:

[0172] The present invention provides a software tool and method for business solutions ~~solution~~ for a telecommunications network. It will be apparent to those with skill in the art that modifications to the above methods and embodiments can occur without deviating from the scope of the present invention. Accordingly, the